POSTER SESSION

1010 Valvular Operations: Improving Outcomes of Valve Repair or Replacement

Sunday, March 07, 2004, 9:00 a.m.-11:00 a.m.
Morial Convention Center, Hall G
Presentation Hour: 9:00 a.m.-10:00 a.m.

1010-135 Clopidogrel Increases Post Cardiac Surgery Bleeding Only if Given Within Three Days of Surgery

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Background:
Clopidogrel (CL) in addition to aspirin is now standard care for treatment of acute coronary syndromes and for coronary stent thrombosis prevention. If this fails and patients need coronary artery bypass grafting (CABG), the irreversible effect of clopidogrel on platelet function is a concern. This study aimed to evaluate the role of preoperative use of CL in bleeding after CABG.
Methods:
A total of 462 patients who underwent CABG in a single surgical centre in 2001-2003 were studied. Patients exposed to CL within 3 days (n=67) (group A), between 3 and 7 days (n=34) (group B), and people not taking CL (n=361) (group C) prior to surgery were all compared. Bleeding index (BI), a modified TIMI criterion, which is a composite of drop in hemoglobin and number of blood units transfused after surgery, was the primary outcome measured. Mortality, acute myocardial infarction, and re-exploration for bleeding were the secondary outcomes.
Results:
Our data showed that group A have a higher mean BI and more TIMI major bleeding (BI>5 g/dl) than either group B or C (p=0.009 and 0.03 respectively for inter-groups comparison). There were no differences in the secondary outcomes occurrence among the three groups. See table.
Conclusion: In this largest-to-date study we have shown that clopidogrel increased the risk of major post-CABG bleeding **only** if taken within three days of surgery. This has major implications for future use of clopidogrel.

*Inter-groups comparison
† Groups A and C comparison
‡ Groups B and C comparison

	Group A N=67	Group B N=34	Group C N=361	*P*-value
"Bleeding index"g/dl	5.42 ± 2.22	4.39 ± 1.81	4.49 ± 2.05	0.009* 0.002† 0.905‡
Bleeding index more than 5 g/dl	56.7%	38.2%	39.6%	0.03* 0.009† 0.875‡
Mortality	1.5%	5.4%	1.9%	0.342
AMI	1.5%	0%	1.1%	0.776
Re-exploration	1.5%	2.8%	1.6%	0.869

1010-136 Torsional Deformation in Ischemic and Remote Left Ventricular Regions During Acute Circumflex and Anterior Descending Coronary Occlusion

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Background: Contraction of helically oriented fibers in the left ventricle (LV) results in systolic torsion, reducing transmural fiber strain gradients and oxygen demand. Acute ischemia decreases torsion in the ischemic region, but effects in remote regions are unknown. We investigated alterations in local and remote LV torsional deformation during acute ischemia in two different territories.
Methods: Six sheep had radiopaque markers implanted on the LV to measure fractional area shrinkage (FAS = 100•(regional $area_{max}$ – regional $area_{min}$)/regional $area_{max}$) and maximal regional systolic torsion (Φ_{max}) using biplane videofluoroscopy one week after surgery, before and during acute anterior wall ischemia (proximal left anterior descending [LAD] occlusion) or acute posterior wall ischemia (distal left circumflex [LCx] occlusion). Color Doppler transesophageal echocardiography graded mitral regurgitation (MR).
Results: Acute LAD and distal LCx occlusions caused similar hemodynamic insults (Table). Acute LAD occlusion decreased septal FAS and anterior Φ_{max}, whereas acute distal LCx occlusion reduced free wall FAS and posterior Φ_{max}, but interestingly increased anterior and lateral Φ_{max}.
Conclusion: This paradoxical increase in regional free wall systolic torsion in non-ischemic sites suggests a compensatory unloading of remote myocardium and highlights regional differences between various ischemic injuries. Such findings may influence approaches for ventricular remodeling surgery.

	LAD		Distal LCx	
HEMODYNAMICS	***prelschemia***	***Ischemia***	***prelschemia***	***Ischemia***
HR (min^{-1})	99±11	107±9	102±12	102±12
LV dP/dt_{max} (mmHg/sec)	1450±460	1040±292*	1700±433	1140±455*
SV (ml)	44±4	31±4*	44±9	34±5*
LVESP (mmHg)	82±15	63±13*	87±21	75±24*
MR (0-4+ scale)	0.8±0.8	0.9±0.7	0.8±0.8	1.2±1.1
FRACTIONAL AREA SHORTENING				
Anteroseptal (%)	19±4	7±2*	22±5	22±6
Posteroseptal (%)	25±4	14±4*	26±4	19±5*
Anterolateral (%)	18±4	16±4	18±5	14±4*
Posterolateral (%)	20±6	21±4	20±4	11±3*
MAXIMAL SYSTOLIC TORSION				
Anterior Wall Φ_{max} (degrees)	2.73±3.82	–0.55±3.00*	4.21±3.96	7.09±3.46*
Lateral Wall Φ_{max} (degrees)	5.04±3.37	3.29±2.20	4.94±2.44	7.79±2.66*
Posterior Wall Φ_{max} (degrees)	2.65±4.05	4.82±2.12	2.86±2.85	1.48±2.95*

* p<0.05, ischemia vs. pre-ischemia, *t*-test for paired observations. Data expressed as Mean±1SD.

1010-137 Intravascular Ultrasound and Valved Stent for Beating Heart Valve Implantation: Is There Really a Need for Angiography?

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BACKGROUND: We evaluated feasibility of intravascular ultrasound (IVUS) guided off-pump aortic (AVR) and pulmonary valve implantation (PVR) using a new self-expanding Valved Stent without angiography.
METHODS: Six pigs (62.5±8.7 Kg) underwent either off-pump A) AVR (n=3) or B) PVR (n=3) using a self-expanding Valved Stent. After left sided thoracotomy, purse-string sutures were placed on either ventricular apex. Under fluoroscopy, a guide wire was inserted trough the apex and advanced over the A) aortic or B) pulmonary valves respectively. A wire-guided IVUS catheter transducer (6F, 12.5MHZ) was inserted and the original A) aortic and B) pulmonary valves identified, the valve diameter and the A) root or B) trunk length were measured. Target site was identified and marked by needles on the body surface. After removal of the IVUS, the Valved Stent delivery system was introduced over the guide wire under fluoroscopy and the Valved Stent deployed over the native valves. Assessment was performed using invasive pressure measurements, IVUS and intracardiac ultrasound including: leaflet motion, planimetric valve orifice, transvalvular gradient, regurgitation and paravalvular leaking. Macroscopic analyse was performed at necropsy.
RESULTS: Both groups showed good valvular function, with full valvular opening and closing. In B) one paravalvular leak was found due to size mismatch. Coronary flow was not impaired in A). At necropsy in A) all, in B) two Valved Stent were correctly placed and safely anchored to the vessel wall.
CONCLUSION: IVUS guided beating heart aortic and pulmonary valve implantation using a self-expanding Valved Stent is feasible and might eliminate the need for per-procedural angiography.

1010-138 Prosthetic Endocarditis: Which Therapy for Which Patient?

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Background. Prosthetic valve infective endocarditis (PVIE) still carries an unacceptable mortality risk and the best therapeutic option (medical vs surgical) is still controversial. Past studies were limited by the small number of pts and gave discordant results.
Objectives: to assess the prognostic markers of outcome and the influence of therapy in a large series of pts with PVIE
Methods. One hundred and four consecutive pts from 2 centers (65 biological -39 mechanical, 20 early-84 late) fulfilled Duke criteria for PVIE and underwent evaluation and follow-up. Among them, 34 (33%) were caused by *Streptococci*, 25 (24%) by *Staphylococci,* 25 (24%) had negative BC. Major end-points were in hospital and long-term mortality.
Results.
Among 104 pts, 22 (21%) died in-hospital. Factors associated with death were comorbidity (p=.07), severe regurgitation (p=.006), *S aureus* infection (p<.001), "complicated" PVIE (p=.07), and CHF (p<.001). By multivariate analysis, CHF (OR=5.5), and *S aureus* (OR =6.1) were the only independent predictors of death.
Fifty-one (49%) pts underwent surgery during the acute phase. For the entire population, in-hospital mortality was not significantly different in operated and non-operated patients (17% vs 25% ,p=ns). However, mortality was lower in operated than in non-operated patients among 25 pts with *S aureus* PVIE, (27 vs 73%, p=.03) and among 43 pts with more than one risk factors (31 vs 71%, p=.02).
Among 82 in-hospital survivors, 21 (26%) new deaths occurred during late follow-up. Pre-